Car Audio System

CMB2101/55

Service

Service

Service Manual

SAFTETY INSTRUCTINS.....1-3
DISMANTLING INSTRUCTIONS.....4
BLOCK DIAGRAM.....5
WIRING DIAGRAM.....6
CIRCUIT DIAGRAM MAIN BOAR.....7-9
CIRCUIT DIAGRAM PANEL BOARD.....10
CIRCUIT DIAGRAM TUNER BOARD.....11
MAIN PCB COMPONENT LAYOUT.....12-13
PANEL PCB COMPONENT LAYOUT.....14-15
TUNER PCB COMPONENT LAYOUT.....16-17
CD CONNECTOR PCB COMPONENT LAYOUT.....18
SET EXPLODER VIEW DRAWING.....19-20
TROUBLE SHOOTING.....20-24

CLASS 1
LASER PRODUCT

Version1.0

2013-5-7

PHILIPS

2.0 SAFTETY INSTRUCTIONS

(GB) WARNING

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)
Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

(NL)
Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(F)
Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

(D)
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

(I)
Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

"After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA."

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

CLASS 1
LASER PRODUCT
3122 110 03420

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

DK Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

Caution: These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

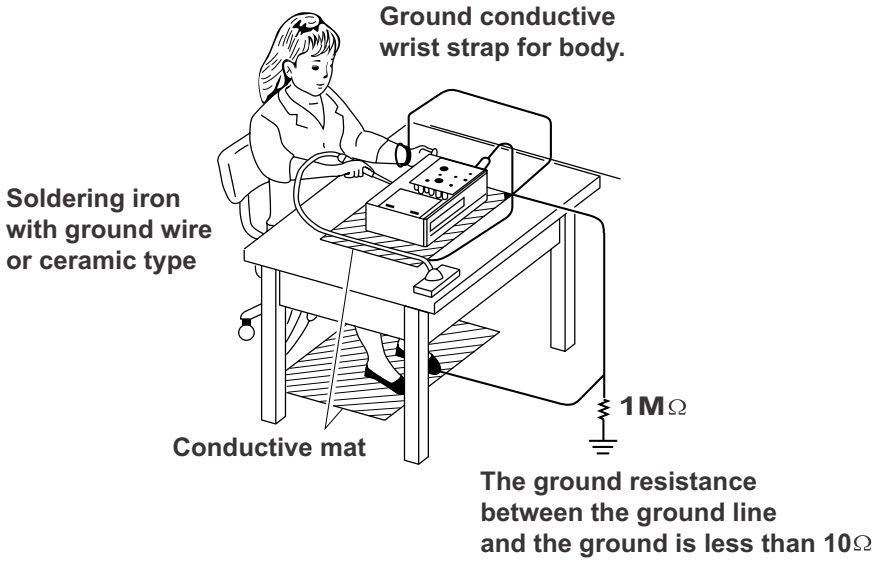
2.1 ESD PROTECTION

- レンズには絶対に触れないでください。
- DO NOT TOUCH THE LENS.
- LINSE NICHT BRÜHREN.
- NE PAS TOUCHER LA LENTILLE.

When the power supply is being turned on, you may not remove this laser cautions label. If it removes, radiation of laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electrocity.
Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire,etc. to protect the laser diode form damage by static electricity.
And also, the LSI and IC are same as above.



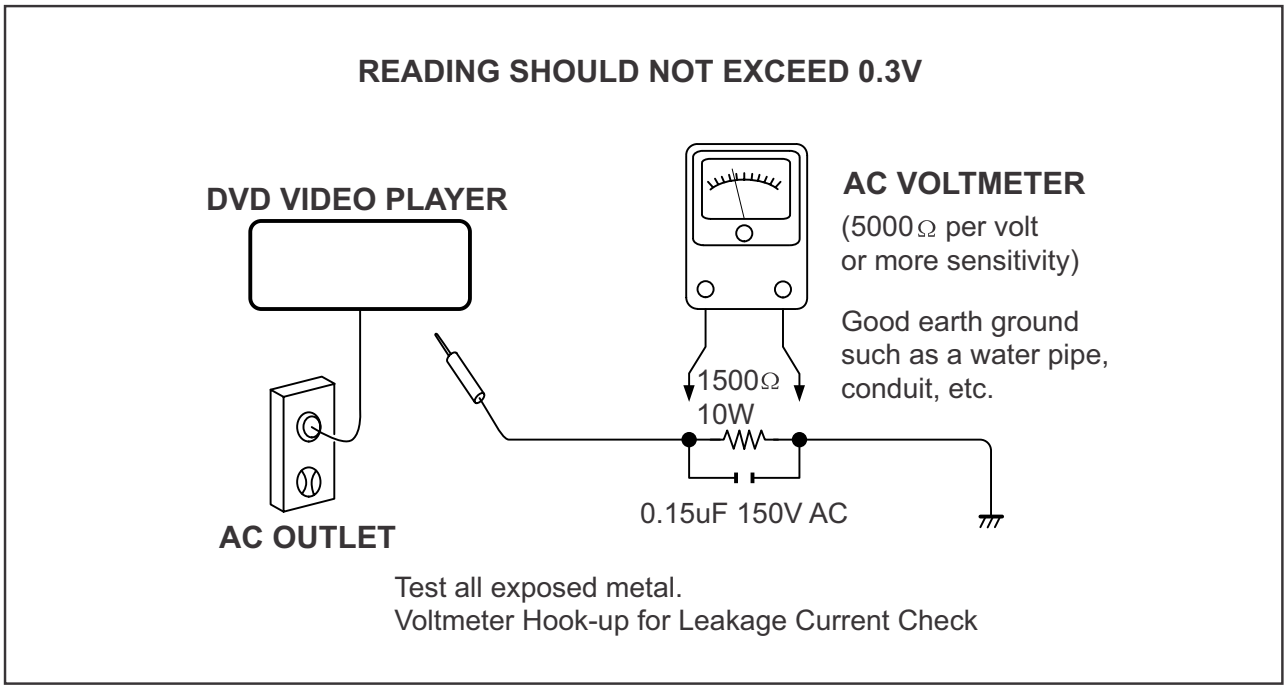
SAFTY NOTICE

SAFTY PRECAUTIONS

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120V AC outlet (do not use an isolation transformer for this check). Use an AC voltmeter, having 5000Ω per volt or more sensitivity. Connect a 1500Ω 10W resistor,paralleled by a 0.15uF 150V AC capacitor between a knomn good earth ground (water pipe, conduit, etc.) and all exposed metal parts of cabinet (antennas, handle bracket, metal cabinet screwheads, metal overlays, control shafts, etc.).

Measure the AC voltage across the 1500Ω resistor. The test must be conducted with the AC switch on and then repeated with the AC switch off. The AC voltage indicated by the meter may not exceed 0.3V.A reading exceeding 0.3V indicates that a dangerous potential exists, the fault must be located and corrected. Repeat the above test with the DVD VIDEO PLAYER power plug reversed.
NEVER RETURN A DVD VIDEO PLAYER TO THE CUSTOMER WITHOUT TAKING NECESSARY CORRECTIVE ACTION.



Test all exposed metal.
Voltmeter Hook-up for Leakage Current Check

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

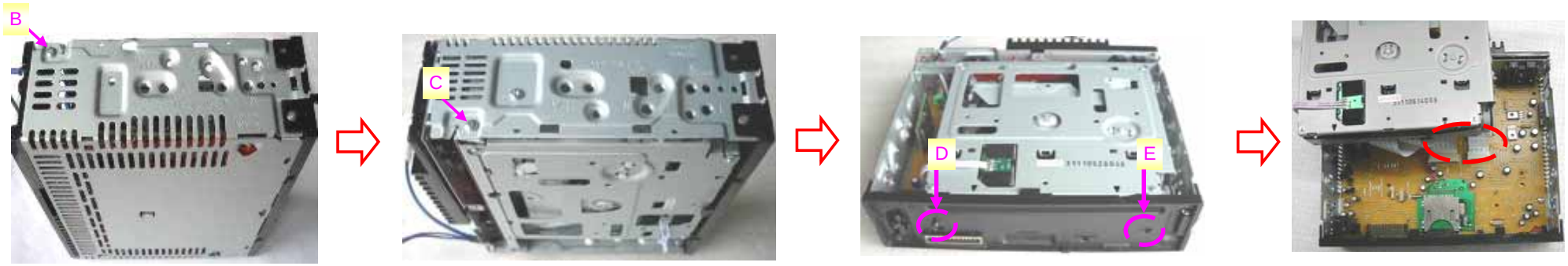
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Dismantlement Method for CMB2101

A、The procedure of disassembling the unit

1. Press EJ button and take out panel，remove A screw in top cover of the unit;Use tweezer to prize up the top cover as below blue arrow direction showed，remove the top cover.

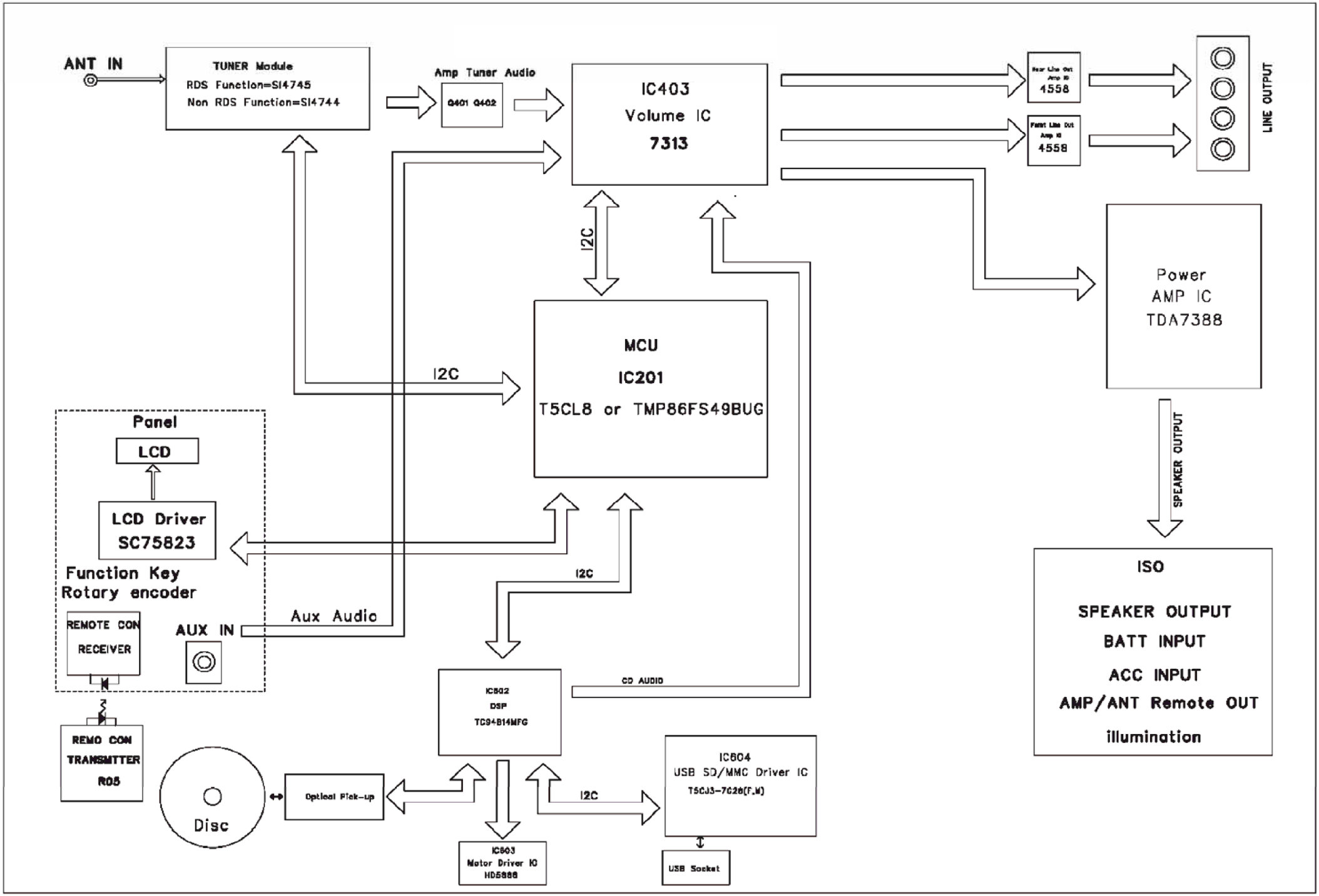
2. Remove B,C screws in left and right side of metal bracket; Then remove D,E screws in panel base; Then remove the CD deck mechanism.



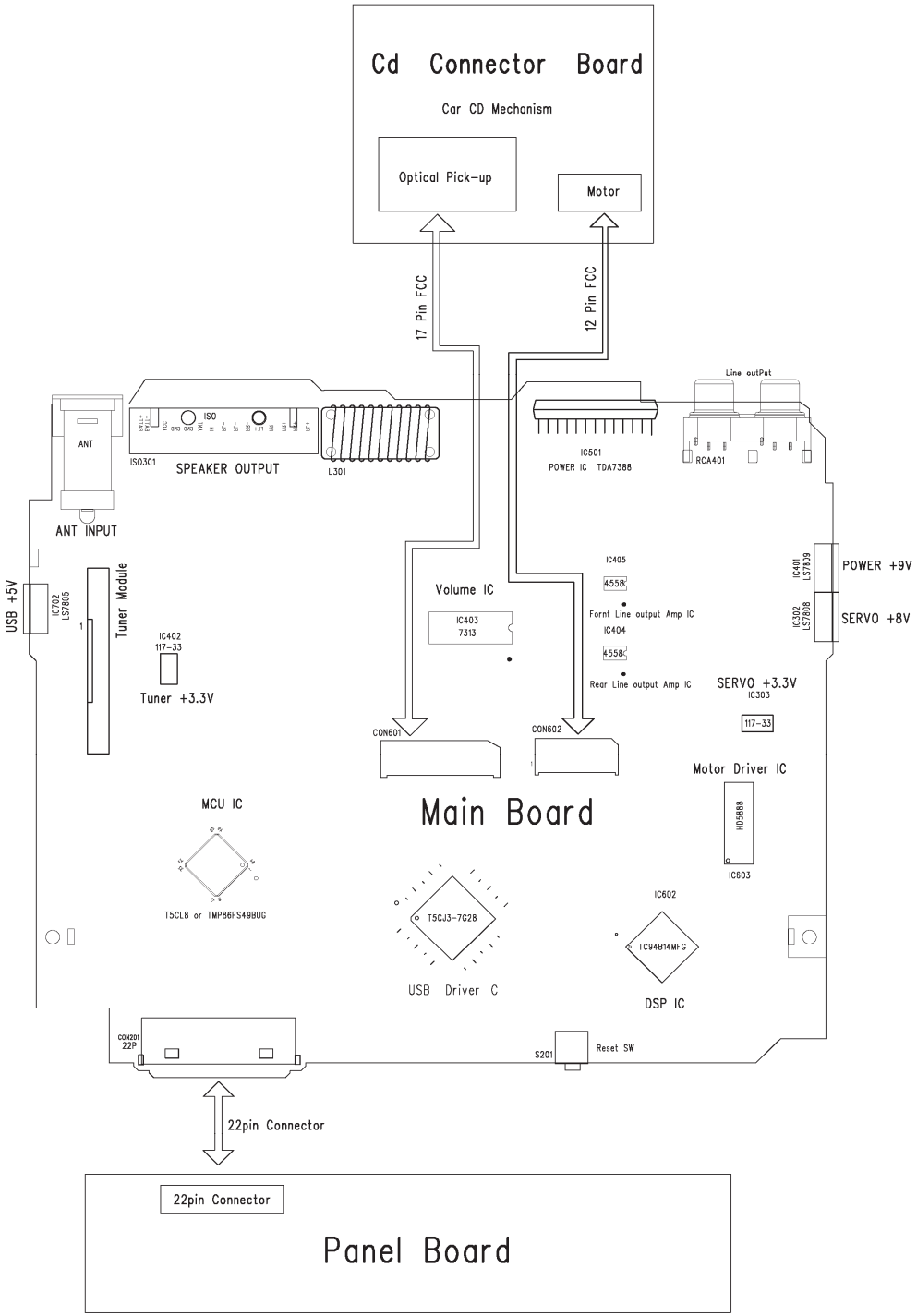
B、The procedure of disassembling the panel

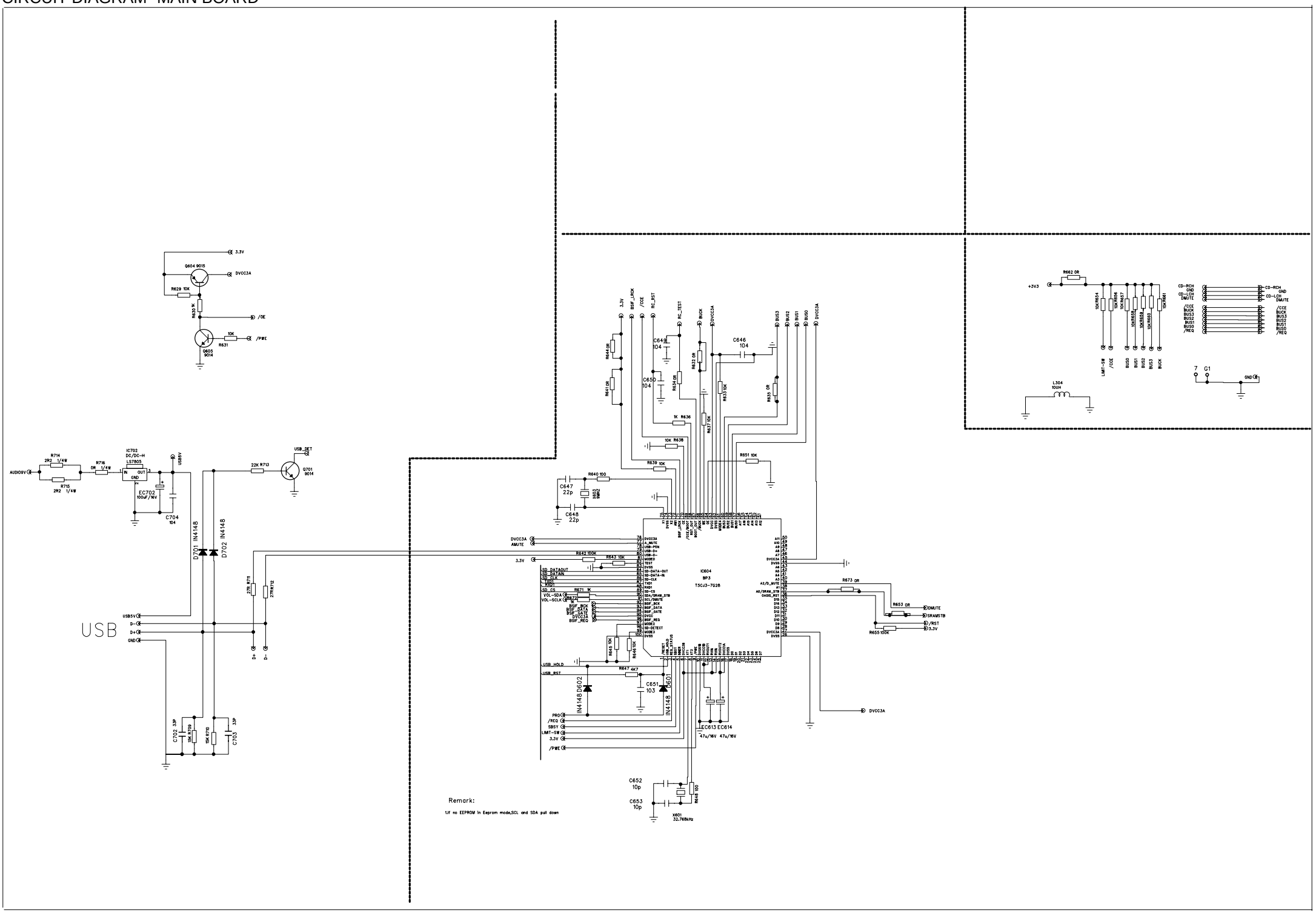
1.Remove the five screws in back panel and separate back panel from front panel; Take out the back panel and then take out PCB board

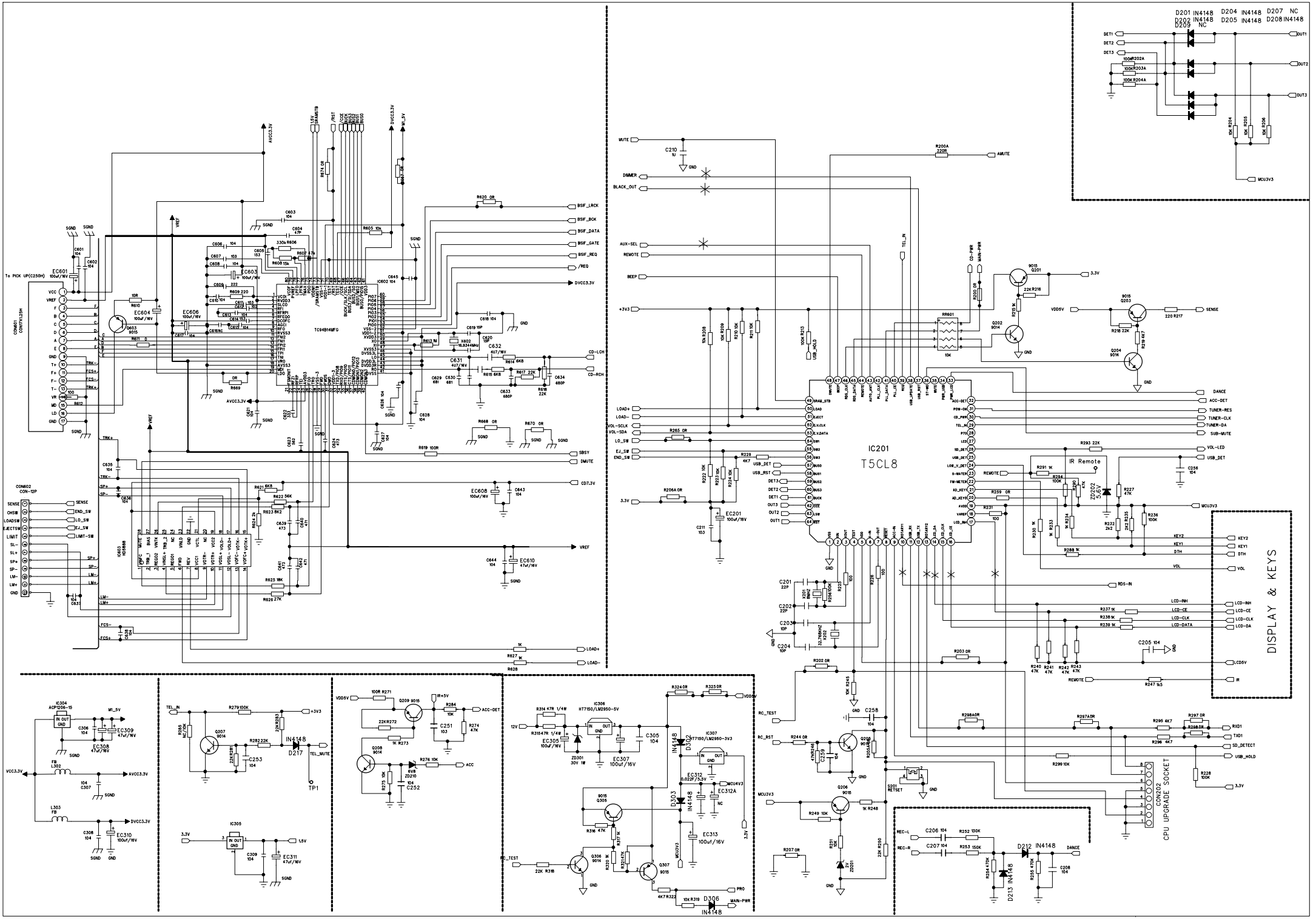
BLOCK DIAGRAM

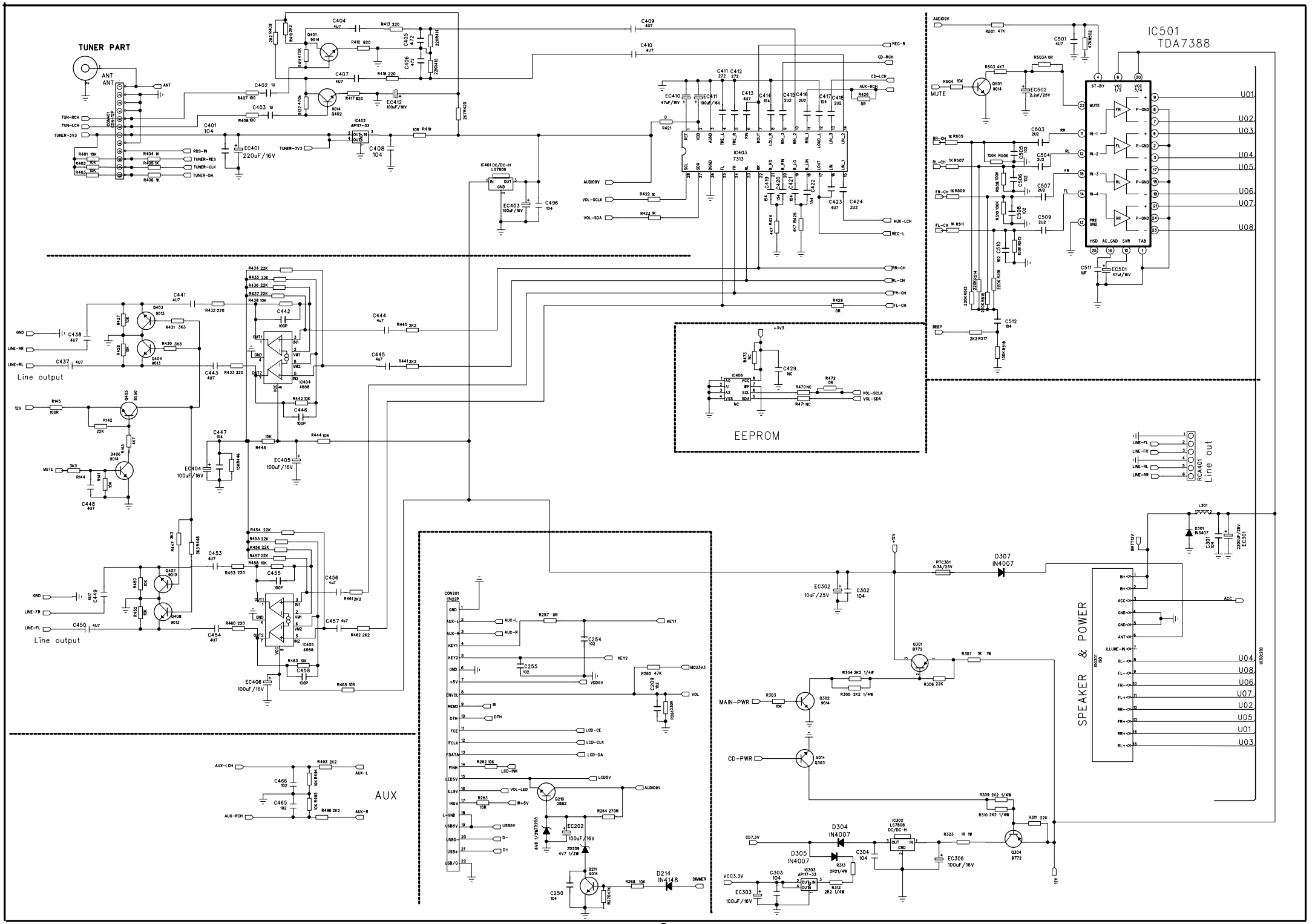


WIRING DIAGRAM

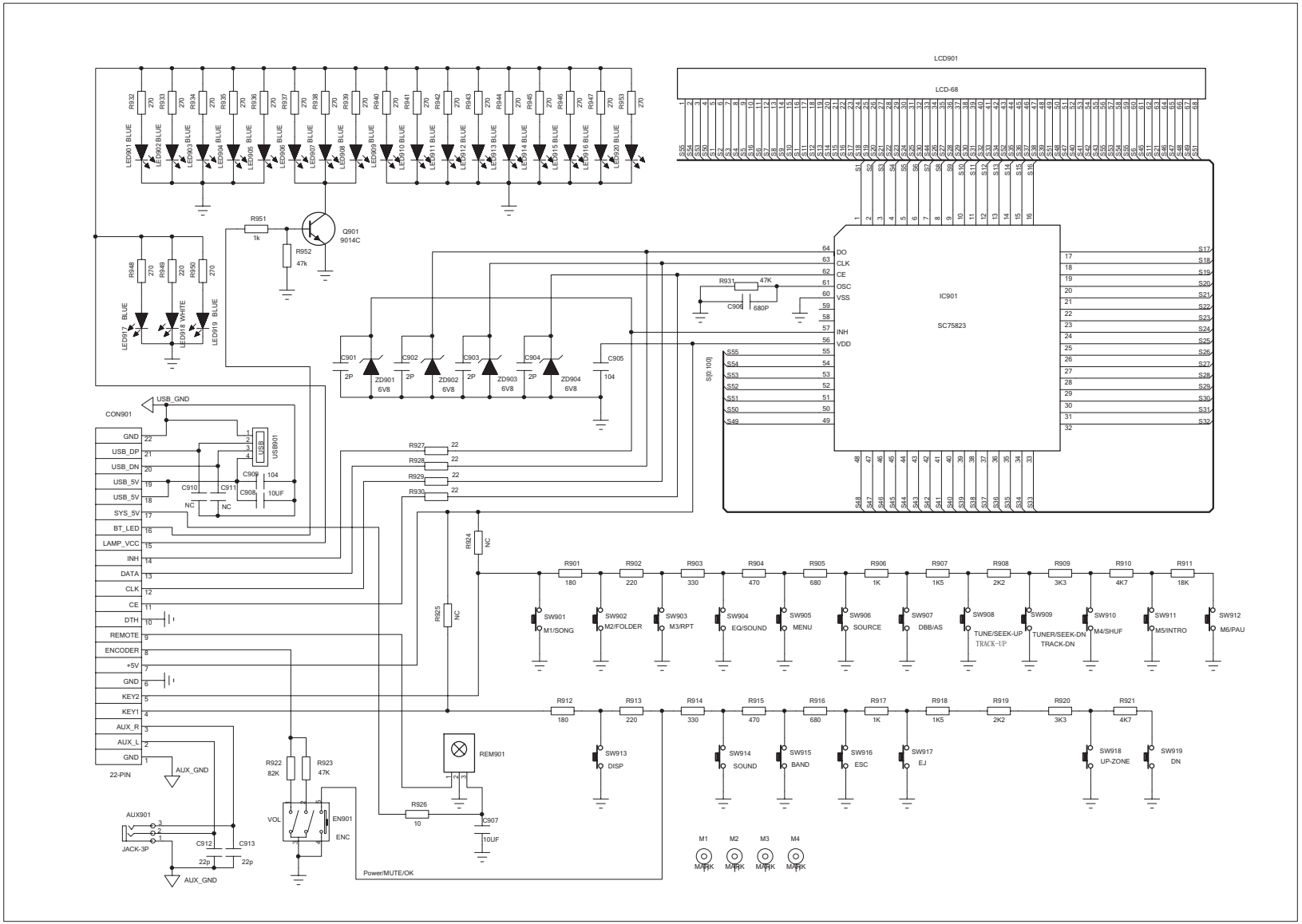



USB
Remark:
1.if no EEPROM in Eeprom mode,SCL and SDA pull down

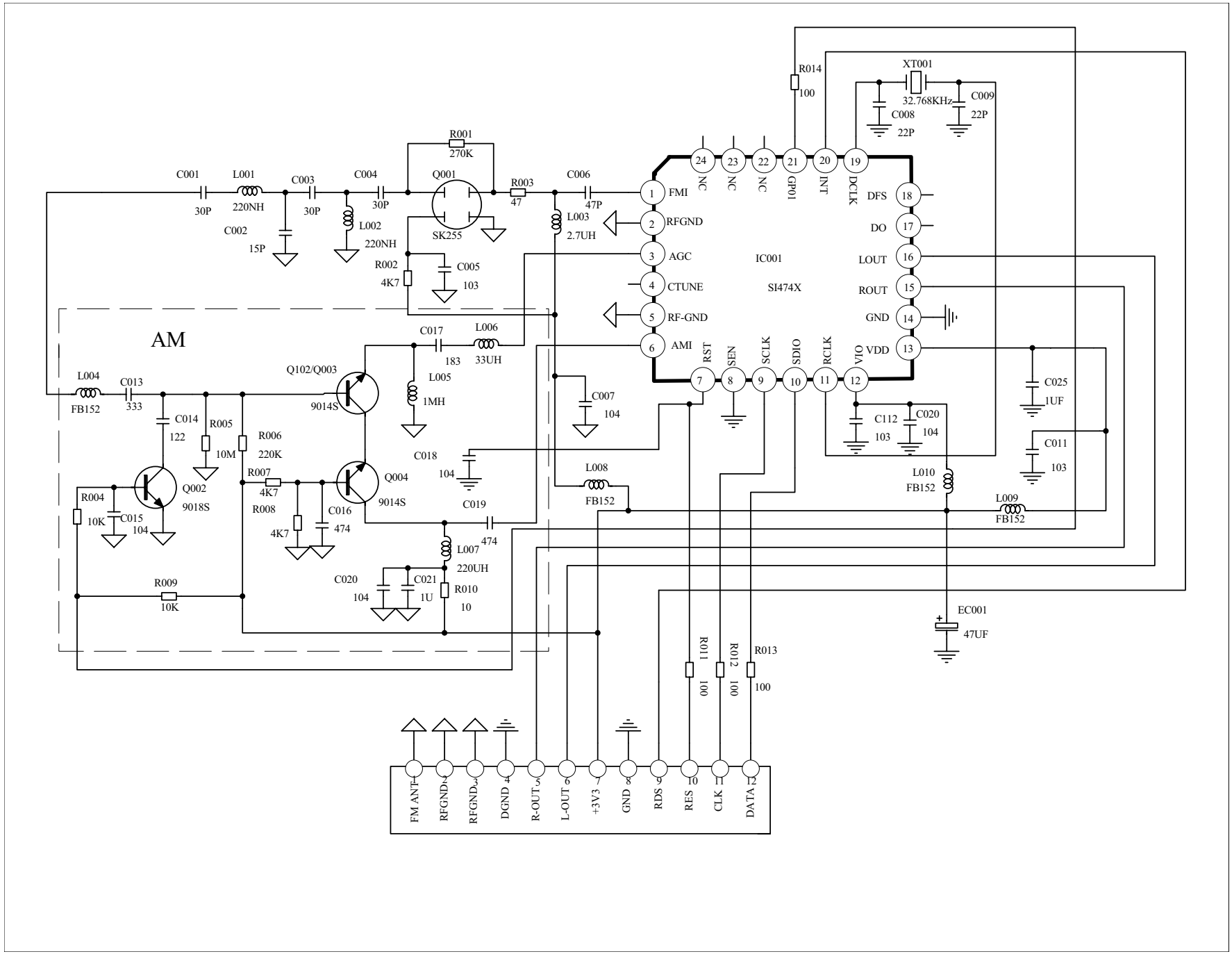

IC201
T5CL8
TC94B14MFG
DISPLAY & KEYS
IR Remote
CPU UPGRADE SOCKET
CON602
CON-12P
CON601
CONTX1-25H
IC603
HD6888
IC304
ACP1206-15
IC305
IC306
H7T150/LM2950-5V
IC307
H7T150/LM2950-3V3
D201 IN4148
D202 IN4148
D203 NC
D204 IN4148
D205 IN4148
D207 NC
D208 IN4148
D209 NC
D217 IN4148
D212 IN4148
D213 IN4148
D306 IN4148
MUTE
DIMMER
BLACK_OUT
AUX-SEL
REMOTE
BEEP
+3V3
AMUTE
TEL_IN
CD-PWR
MAIN-PWR
SENSE
DANCE
ACC-DET
TUNER-RES
TUNER-CLK
TUNER-DA
SUB-MUTE
VOL-LED
USB_DET
KEY2
KEY1
DTH
VOL
RDS-IN
LCD-INH
LCD-CE
LCD-CLK
LCD-DATA
LCD5V
IR
REMOTE
LOAD+
LOAD-
VOL-SCLK
VOL-SDA
LO_SW
EJ_SW
END_SW
SBSY
DMUTE
CD7.3V
VREF
BSIF_LRCK
BSIF_BCK
BSIF_DATA
BSIF_GATE
BSIF_REQ
/REQ
DVCC3.3V
AVCC3.3V
MCU3V3
CD-LCH
CD-RCH
RC_TEST
RC_RST
SD_DETECT
USB_HOLD
RXD1
TXD1
PRO
MAIN-PWR
ACC-DET
TEL_MUTE
TP1
DET1
DET2
DET3
OUT1
OUT2
OUT3
To PICK UP(C250H)


TUNER PART
ANT
ANT
CON401P
TUN-RCH
TUN-LCH
TUNER-3V3
RDS-IN
TUNER-RES
TUNER-CLK
TUNER-DA
EC401
220uF/16V
IC402
AP117-33
EC412
100uF/16V
IC401 DC/DC-H
L57809
EC403
100uF/16V
IC403
7313
AUDIO9V
VOL-SCLK
VOL-SDA
REC-R
CD-RCH
CD-LCH
AUX-RCH
AUX-LCH
REC-L
RR-CH
RL-CH
FR-CH
FL-CH
IC501
TDA7388
MUTE
U01
U02
U03
U04
U05
U06
U07
U08
EEPROM
IC406
Line output
Line output
AUX
Line out
RCA401
SPEAKER & POWER
MAIN-PWR
CD-PWR
D307
IN4007
D304
IN4007
D305
IN4007
D214
IN4148
DIMMER
IC302
L57808
DC/DC-H
IC303
AP117-33
EC202
100uF/16V
EC302
10uF/25V
EC306
100uF/16V
EC303
100uF/16V
EC404
100uF/16V
EC405
100uF/16V
EC406
100uF/16V
BATT12V
ACC
ILLUME-IN
12V
VCC3.3V
CD7.3V

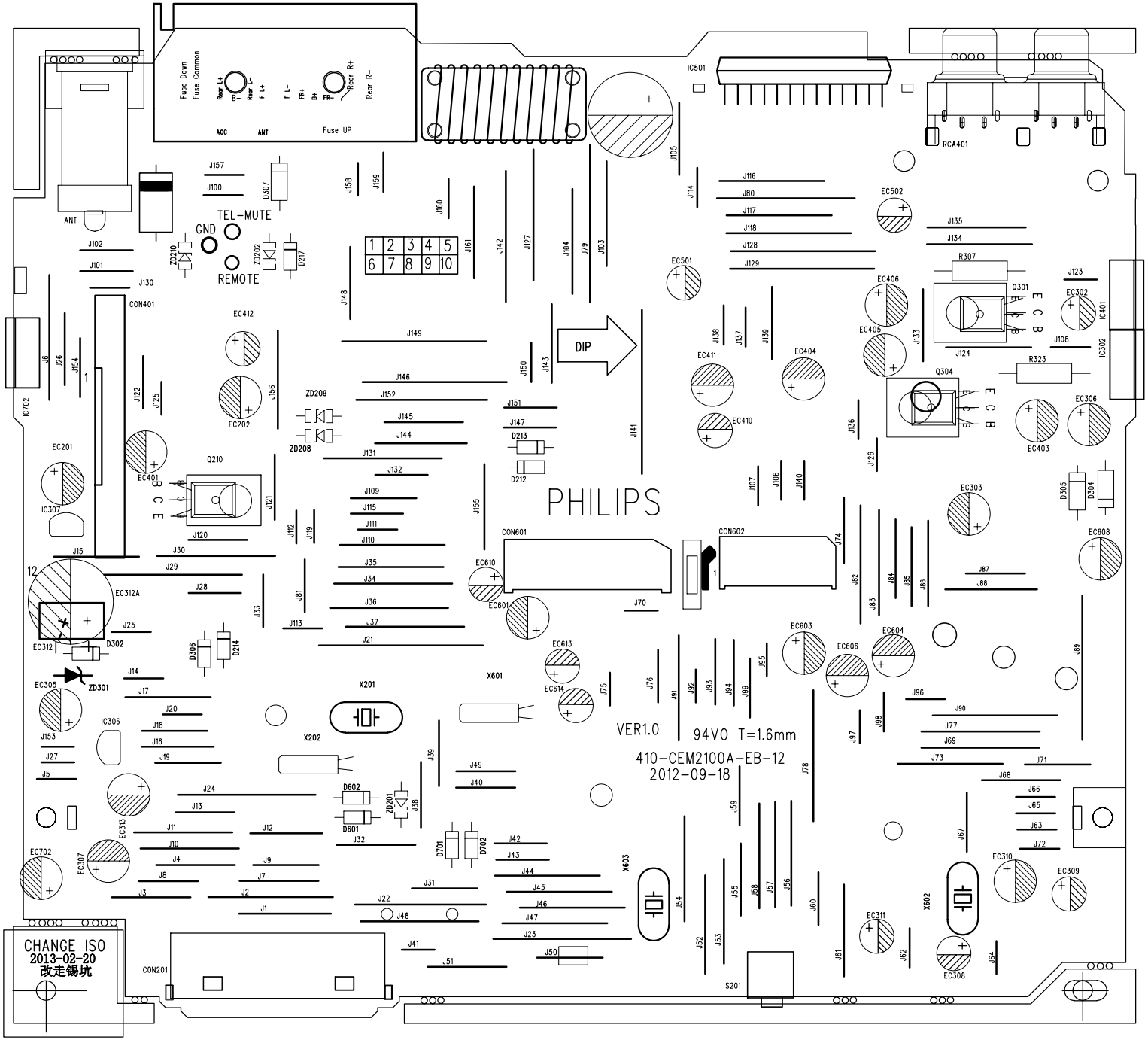
CIRCUIT DIAGRAM -PANEL BOARD



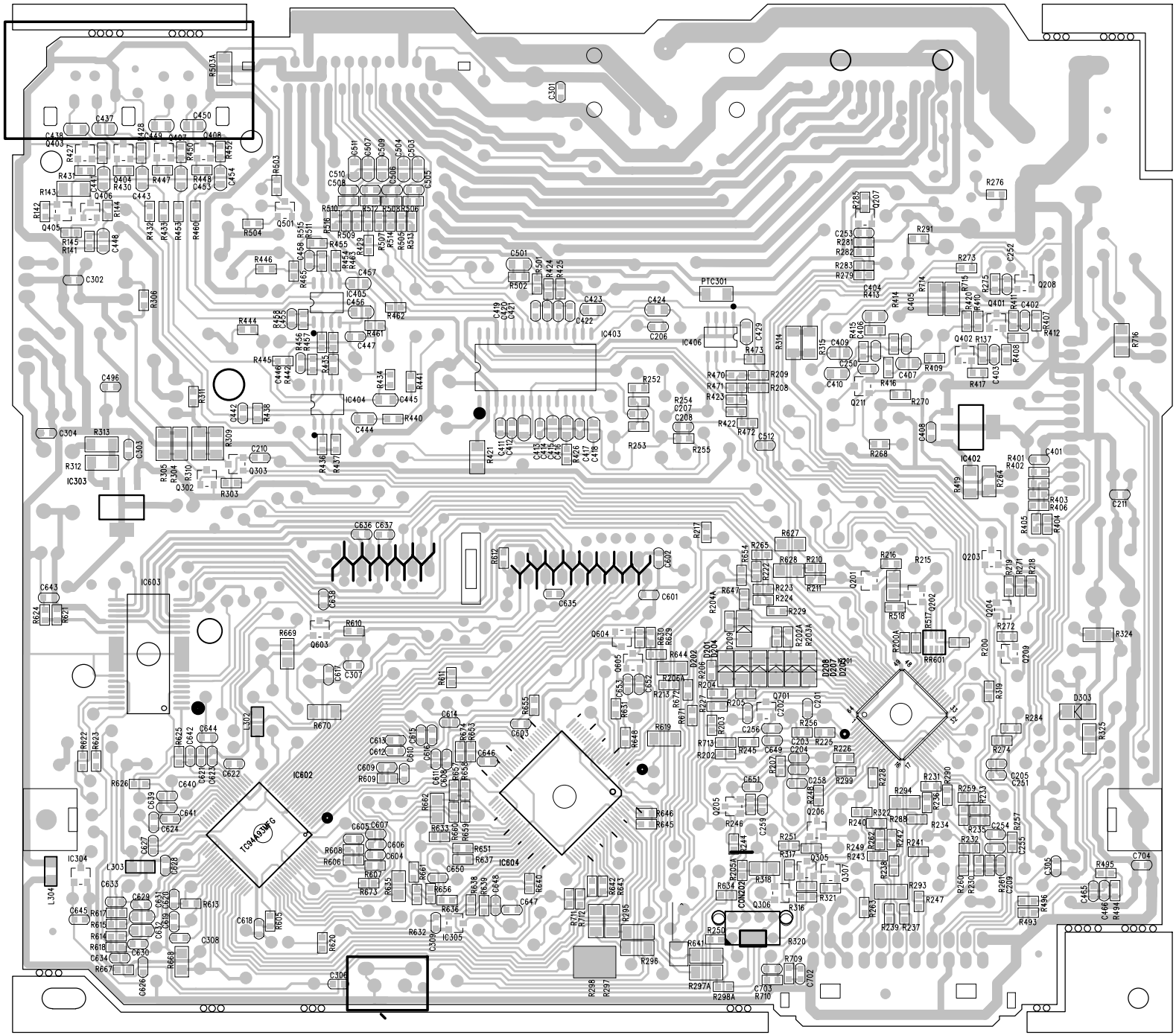
CIRCUIT DIAGRAM -TUNER BOARD



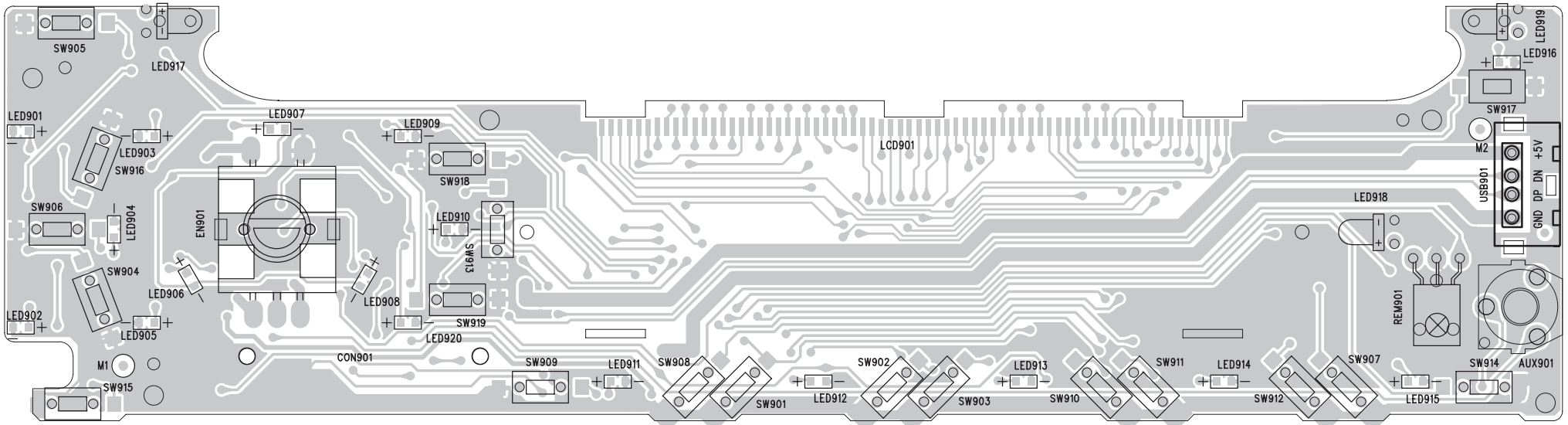
PCB LAYOUT -MAIN BOARD TOP SIDE VIEW



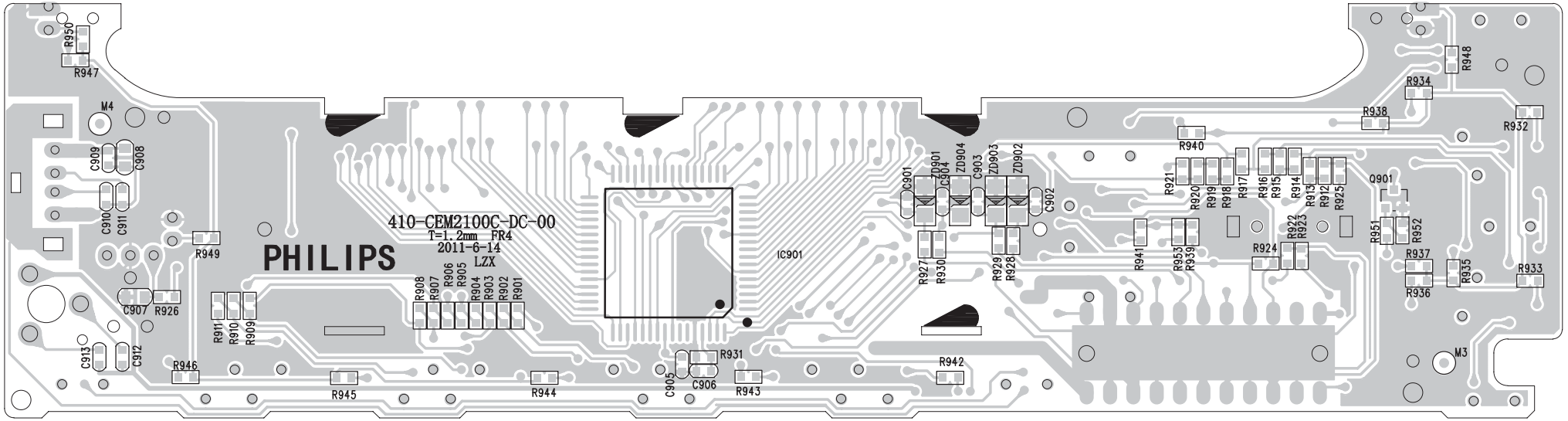
PCB LAYOUT -MAIN BOARD BOTTOM SIDE VIEW



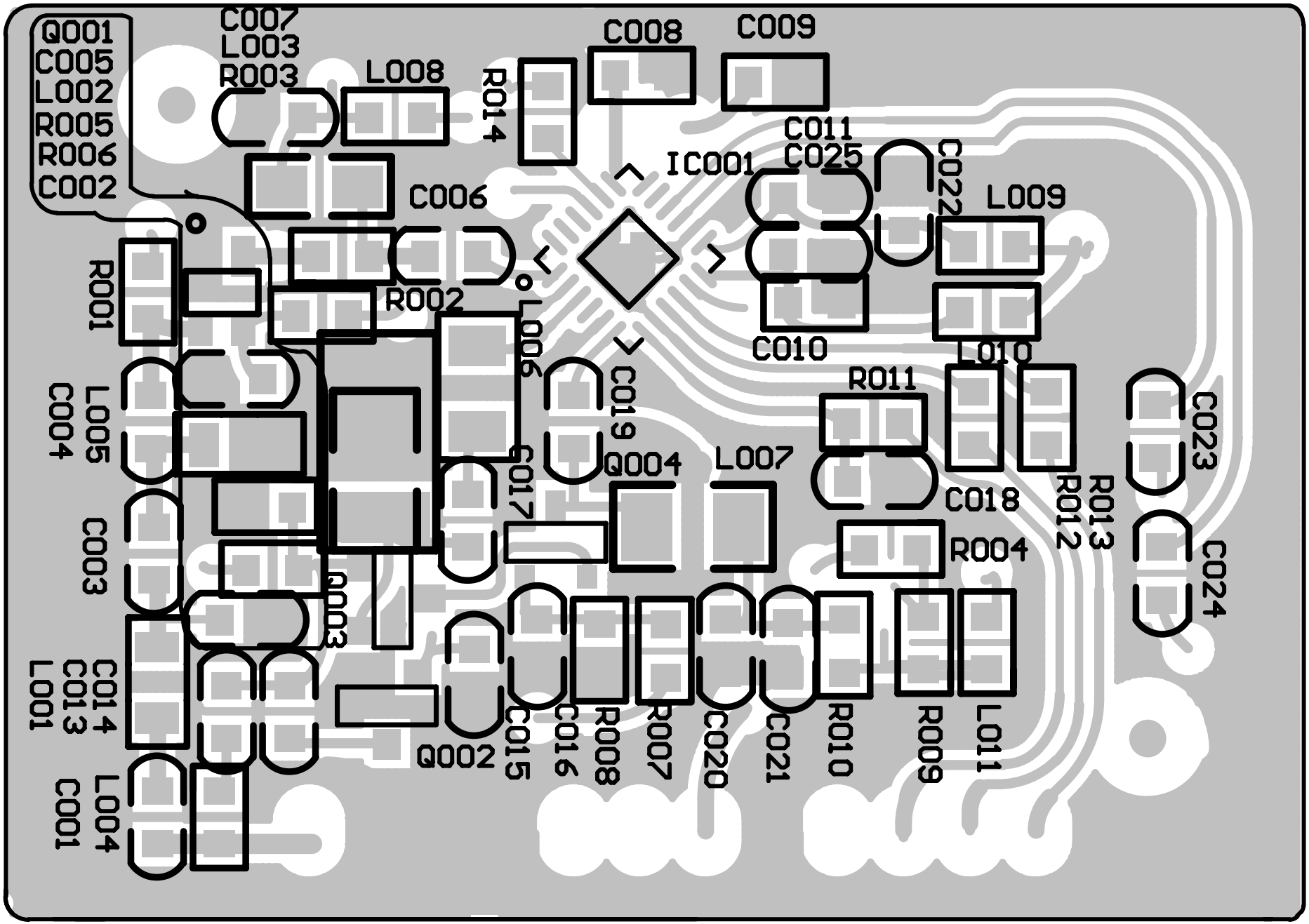
PCB LAYOUT -PANEL BOARD TOP SIDE VIEW



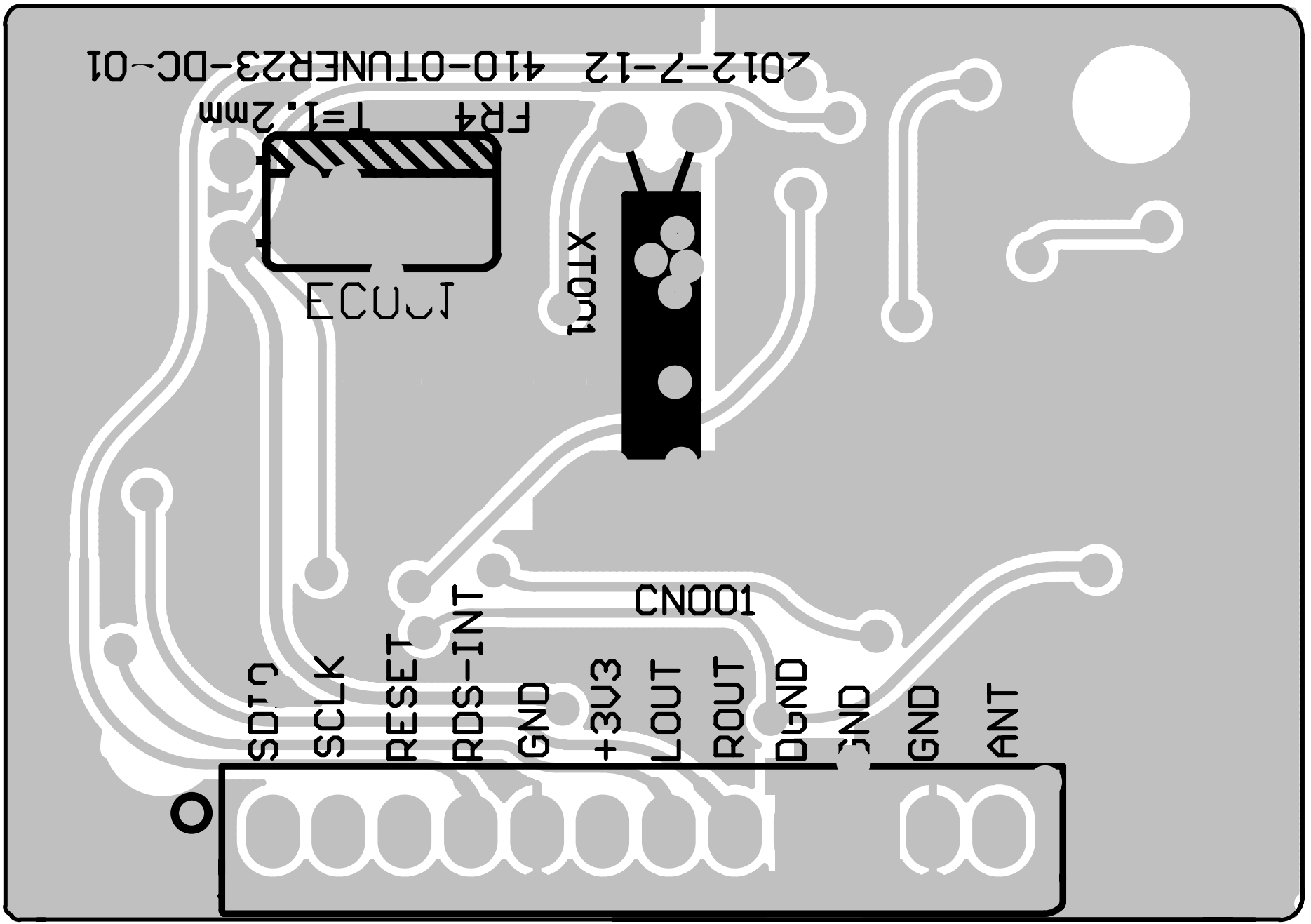
PCB LAYOUT -PANEL BOARD BOTTOM SIDE VIEW



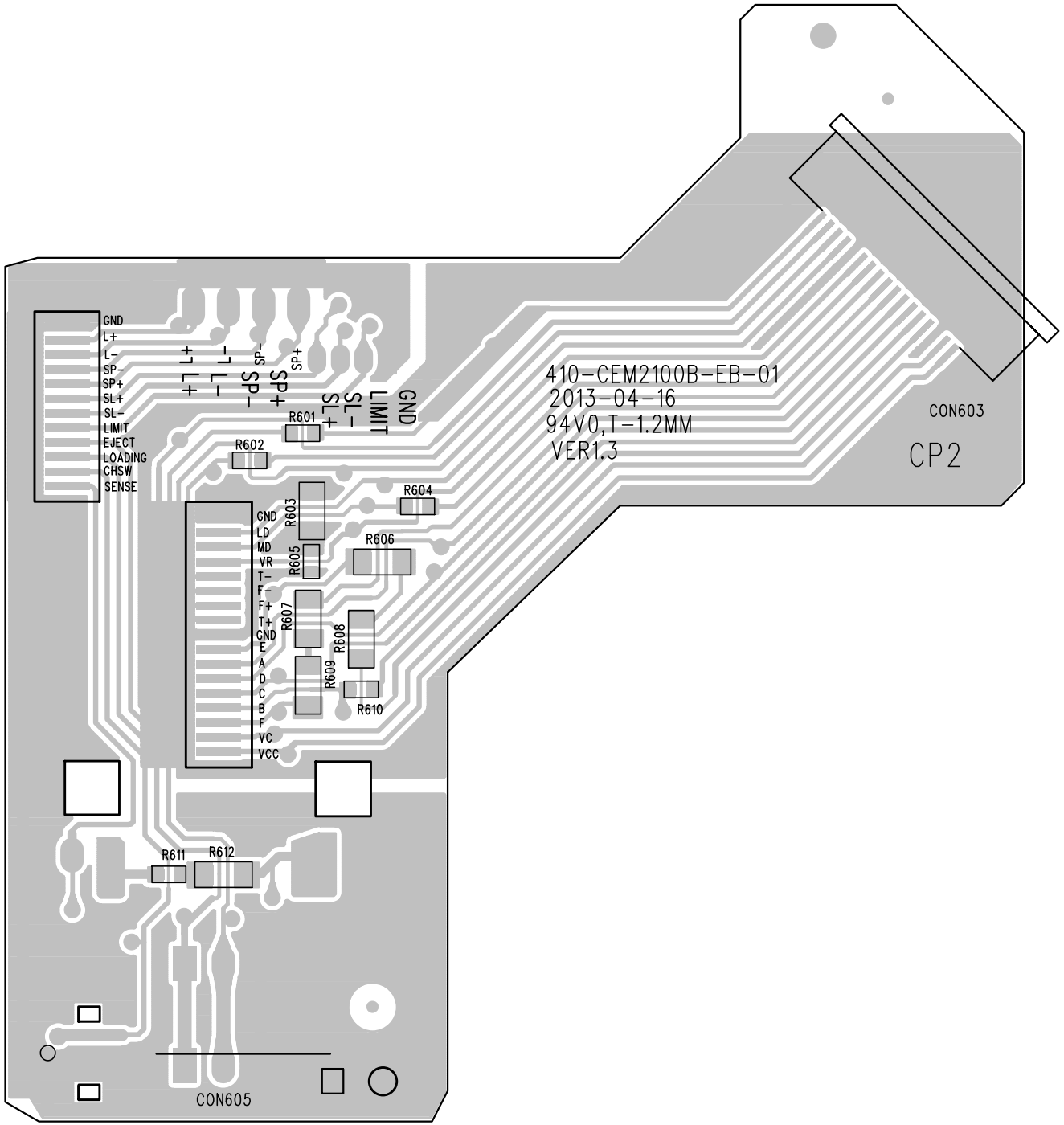
PCB LAYOUT -TUNER BOARD TOP SIDE VIEW



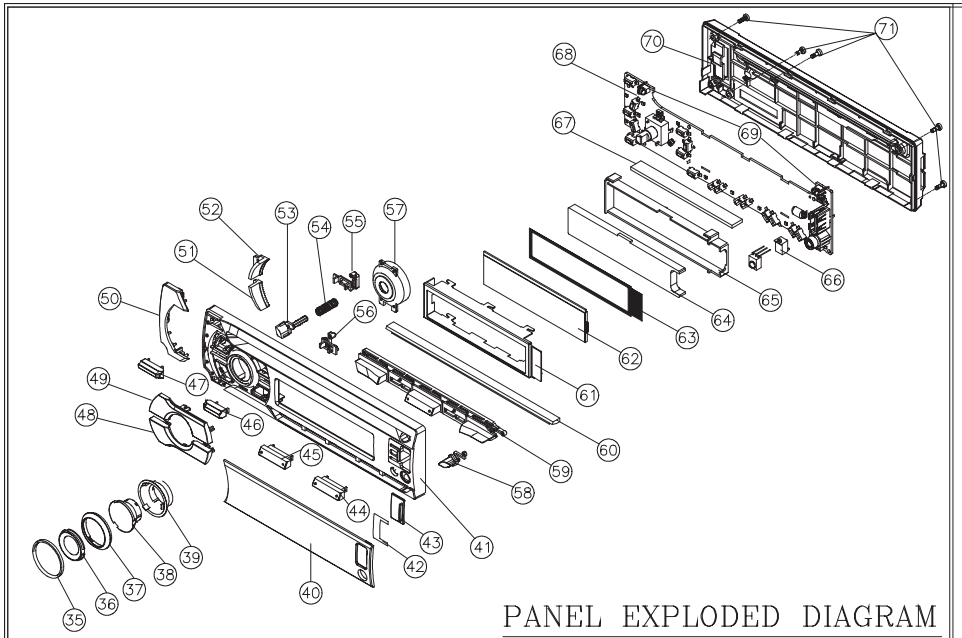
PCB LAYOUT -TUNER BOARD BOTTOM SIDE VIEW

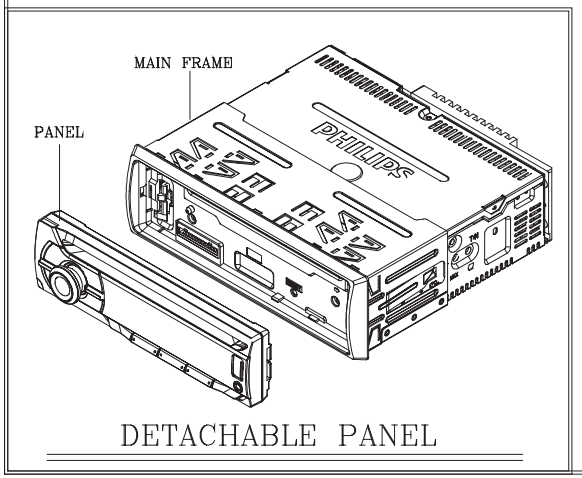


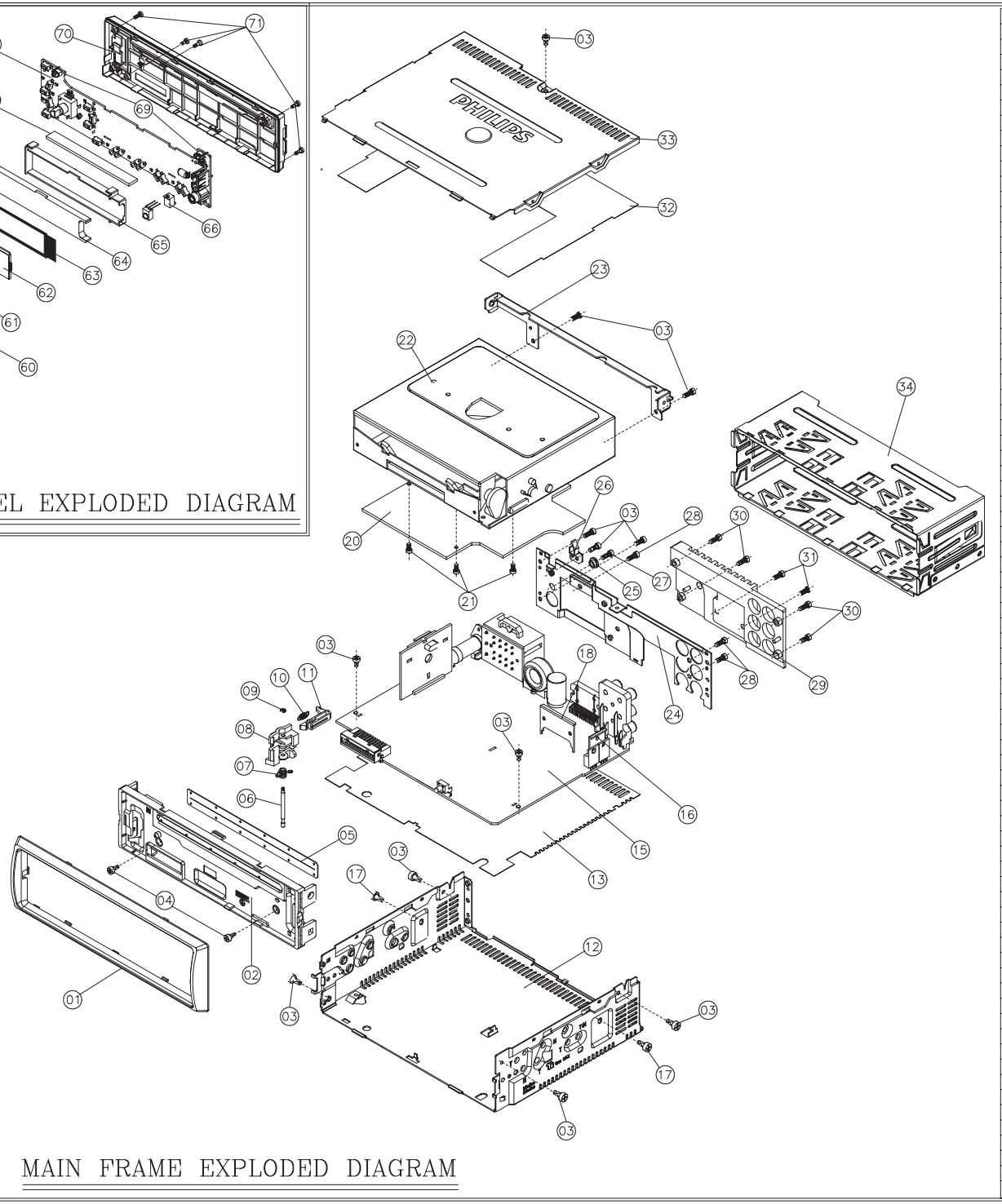
PCB LAYOUT CD CONNECTOR TOP SIDE VIEW



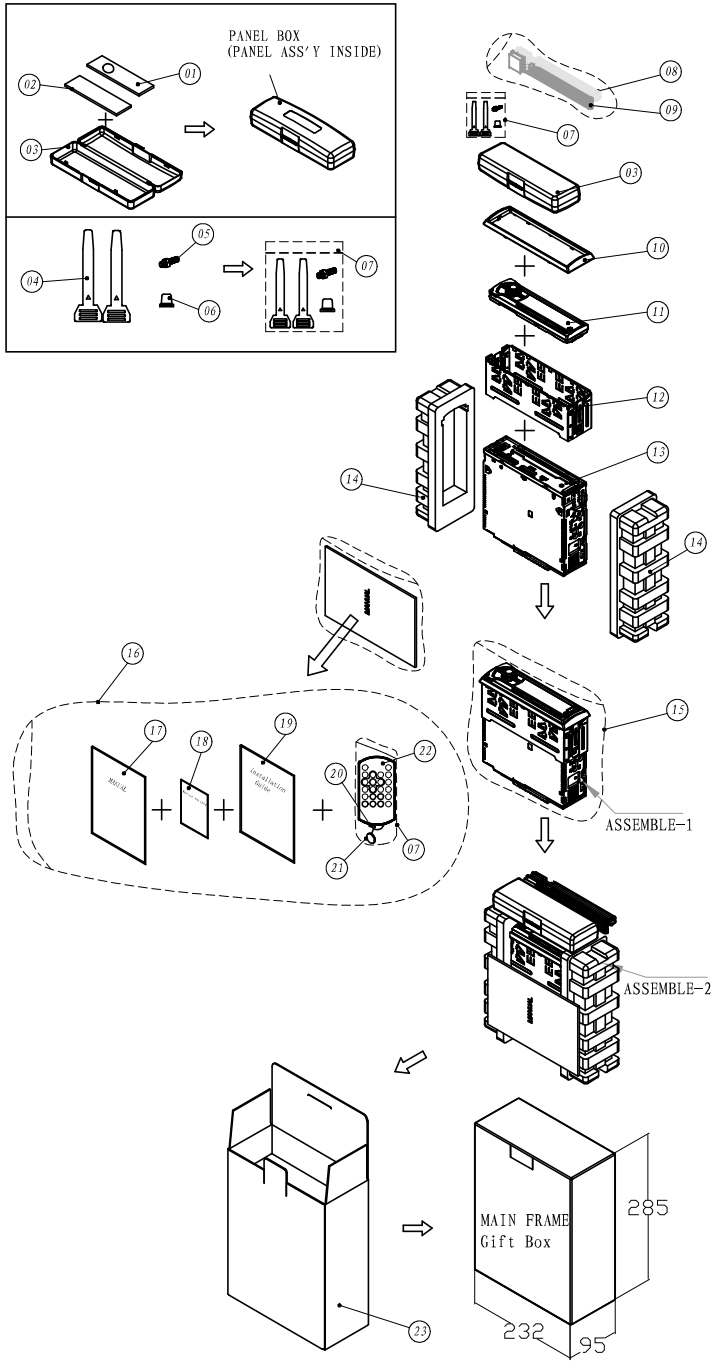
SET EXPLODER VIEW DRAING



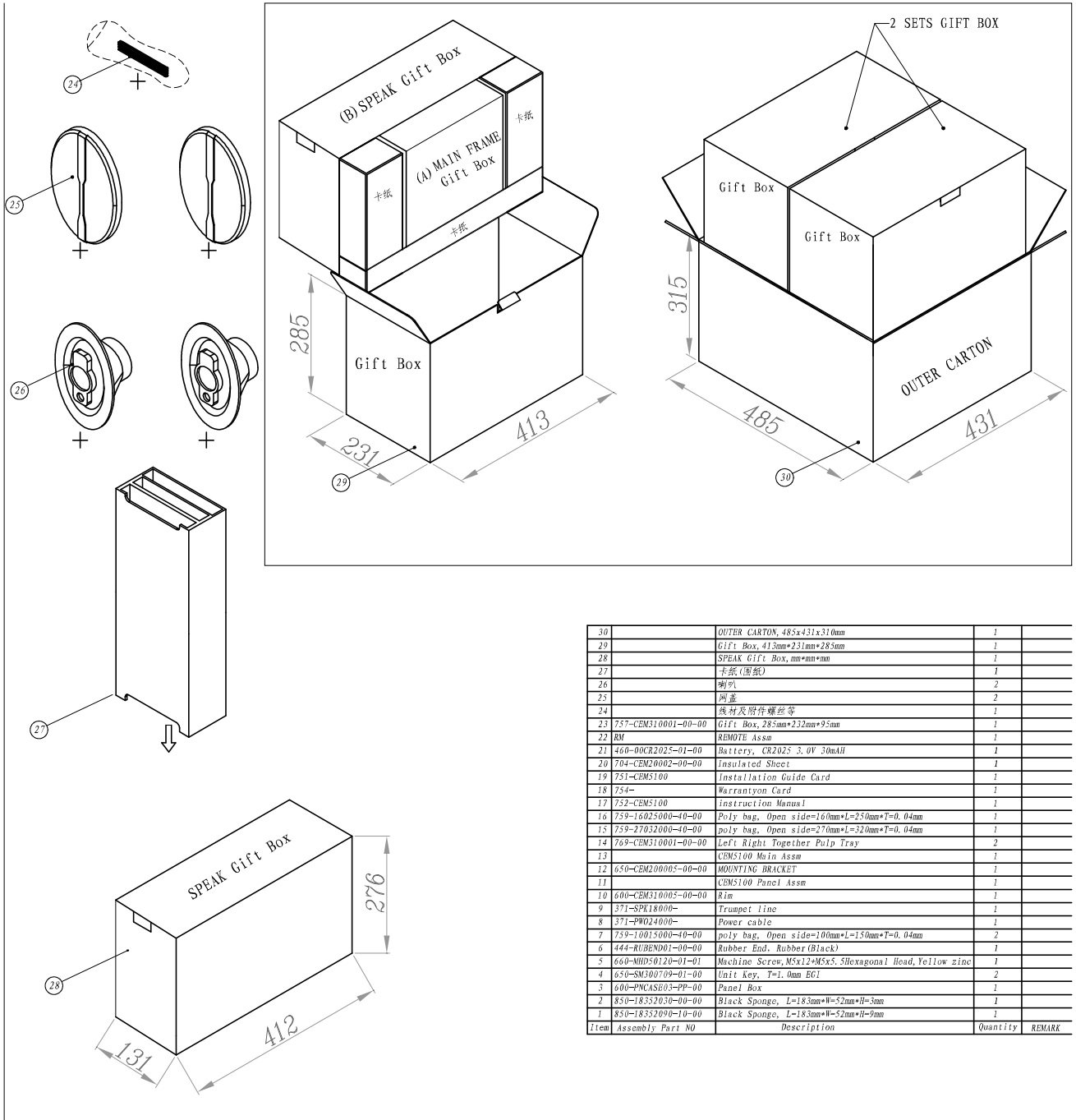




NO	PART NUBER	DESCRIPTION	QTY
77			
76			
75			
74			
73			
72			
71	660-TBH20083-24-00	SCREW 2.0x8.0mm	5
70	600-CEM310007-00-00	BACK PANEL	1
69	600-CEM310032-00-00	LED BRACKET	2
68	410-CEM2100C-DC-00	PANEL PCB	1
67	443-82008220-00-00	RUBBER CONTACT	1
66	600-CEM310030-00-00	SENSOR-BRACKET	1
65	600-CEM200024-00-00	LCD HOLDER	1
64	600-CEM200025-00-00	LCD REFLECTOR	1
63	704-CEM200001-00-00	LCD DIFFUSION SHEET	1
62	440-0C352494-00-00	LCD	1
61	650-CEM200006-00-00	LCD BRACKET	1
60	600-CEM310011-00-00	CD-SLOT-ILLU.	1
	600-CEM310023-00-00	SET BUTTON "D"	1
	600-CEM310022-00-00	BUTTON CD Eject	1
	600-CEM310012-00-00	VOL-REFLECTOR	1
56	600-CEM310027-00-00	BUTTON BRACKET"B"	1
55	600-CEM310026-00-00	BUTTON BRACKET"A"	1
54	650-CEM20011-00-00	PANEL RELEASE SPRING	1
53	600-CEM310029-00-00	BUTTON "RELEASE"	1
52	600-CEM310014-00-00	BUTTON ILLU.-A	
51	600-CEM310015-00-00	BUTTON ILLU.-B	
50	600-CEM310028-10-00	SET BUTTON "A"	
49	600-CEM310020-00-00	SET BUTTON "B"	
48	600-CEM310021-00-00	SET BUTTON "C"	1
47	600-CEM310018-00-00	BUTTON "A	1
46	600-CEM310019-00-00	BUTTON "B"	1
45	600-CEM310024-00-00	BUTTON "C"	1
44	600-CEM310025-00-00	BUTTON "D"	1
43	600-CEM310031-00-00	USB Cover	1
42	705-CEM200001-00-00	PC SHEET T=0.15mm	1
41	600-CEM310006-00-00	FRONT PANEL	1
40	600-CEM310008-00-00	LENS (USB)	1
39	600-CEM310016-00-00	KNOB-COVER-A	1
38	600-CEM310013-00-00	KNOB REFLECTOR	1
37	600-CEM310017-00-00	KNOB-COVER-B	1
36	600-CEM310010-00-00	KNOB-COVER-LENS	1
35	444-CEM310001-00-10	RUBBER Ring "A"	1
34	650-CEM200005-00-00	HALF-SLEEVE	1
33	650-CEM310002-00-00	TOP COVER	1
32	703-CEM310001-00-00	DUST PROOF WEB CLOTH	1
31	660-MPH30160-21-00	SCREW 3.0x16mm	2
30	660-EBH2608B-21-00	SCREW 2.6x10mm	4
29	650-CEM310006-05-00	HEAT SINK	1
28	660-TPH30101-21-00	SCREW 3.0x10mm	3
27	660-EBH2608B-21-00	SCREW 2.6x8mm	1
26	650-CEM310007-00-00	WIRE-CLAMP	1
25	600-FIX10031-00-00	Patch Plastic-PA-66	1
24	650-CEM310004-00-00	BACK-COVER (CD)	1
23	650-CEM310003-00-00	DECK BRACKET(BACK)	1
22	432-SCD300LK-00-31	CD MECHANISM	1
21	660-EPH2006B-27-00	SCREW 2.0x5mm	3
20	410-CEM2100B-EB-01	CD Connect PCB	1
19			
18	650-SM885A07-00-00	IC BRACKET	1
17	660-MPH30060-21-00	SCREW 3.0x6.0mm	2
16	650-000SL835-00-00	7808 IC BRACKET	2
15	410-CEM2100A-EB-12	MAIN PCB	1
14			
13	701-CEM310001-00-00	FIBRE SHEET	1
12	650-CEM310001-00-00	MAIN BRACKET	1
11	600-CEM310003-00-00	PANEL LOCKER B	1
10	650-CEM200010-00-00	SPRING "B"	1
09	661-ERM01500-04-00	"E" RING	1
08	600-CEM310002-00-00	PANEL LOCKER A	1
07	650-CEM200009-00-00	SPRING "A"	1
06	650-CEM200011-00-00	PIN	1
05	703-CEM200002-00-00	CD DUSTPROOF FELT	1
04	660-EBH2606B-24-00	SCREW 2.6x6	2
03	660-EBH2605B-21-00	SCREW 2.6x5	12
02	600-CEM310001-10-00	BASE PANEL (NO SD)	1
01	600-CEM310005-00-00	TRIM PLATE	1



(A) MAIN FRAME Packing explode darwing



(B) SPEAK Packing explode darwing

Item	Assembly Part NO	Description	Quantity	REMARK
30		OUTER CARTON, 485x431x310mm	1	
29		Gift Box, 413mm*231mm*285mm	1	
28		SPEAK Gift Box, mm*mm*mm	1	
27		卡纸(围纸)	1	
26		喇叭	2	
25		网盖	2	
24		线材及附件螺丝等	1	
23	757-CEM310001-00-00	Gift Box, 285mm*232mm*95mm	1	
22	RM	REMOTE Assm	1	
21	460-00CR2025-01-00	Battery, CR2025 3.0V 30mAH	1	
20	704-CEM20002-00-00	Insulated Sheet	1	
19	751-CEM5100	Installation Guide Card	1	
18	754-	Warrantyon Card	1	
17	752-CEM5100	instruction Manual	1	
16	759-16025000-40-00	Poly bag, Open side=160mm*L=250mm*T=0.04mm	1	
15	759-27032000-40-00	poly bag, Open side=270mm*L=320mm*T=0.04mm	1	
14	769-CEM310001-00-00	Left Right Together Pulp Tray	2	
13		CEM5100 Main Assm	1	
12	650-CEM200005-00-00	MOUNTING BRACKET	1	
11		CEM5100 Panel Assm	1	
10	600-CEM310005-00-00	Rim	1	
9	371-SPK18000-	Trumpet line	1	
8	371-PWO24000-	Power cable	1	
7	759-10015000-40-00	poly bag, Open side=100mm*L=150mm*T=0.04mm	2	
6	444-RUBEND01-00-00	Rubber End, Rubber(Black)	1	
5	660-MHD50120-01-01	Machine Screw, M5x12*M5x5.5Hexagonal Head, Yellow zinc	1	
4	650-SM300709-01-00	Unit Key, T=1.0mm EC1	2	
3	600-PNCASE03-PP-00	Panel Box	1	
2	850-18352030-00-00	Black Sponge, L=183mm*W=52mm*H=5mm	1	
1	850-18352090-10-00	Black Sponge, L=183mm*W=52mm*H=9mm	1	

CMB2101 Trouble shooting

Product Model	CMB2101	Area	55	Date	2013-4-24

NO.	failure	failure cause	remark
1	NO Power	a、To check whether the 4Pin power input wire is connected well to the ISO connector; Whether it is loose of the 15A fuse of the ISO connector, can't be open circuit.	
		b、To check whether the reset button Sw201 was long-term work then cause short circuit then on power on.	
		c、To check whether there is any contamination or foreign body on the Pins and shrapnels of the male connector (on the panel) and female connector(on the main board).	
		d、To check the voltage of main board B+ 、 ACC should be +12V；The voltage of the zener diode (ZD210) should be 6V8.	
		e、 To check whether the voltage of the 31st/ 32nd pins of MCU T5CL8 (IC201) were normal.	
		f、 To check the voltage of the 19th pin AVDD of MCU T5CL8 should be +3V3, the output voltage of IC307 LM2950 should be +3V3.	
		g、To check the oscillation frequency of the crysta lX201 should be 8MHz, and the crystal X202 should be 32.768KHZ.	
		h、To check the voltage of the Panel LED should be +5V.	
2	NO audio output	a、To check the VOL knob can't be turned to the lowest lever.	
		b、To check whether the unit was under MUTE mode, press SOURCE knob and check whether the audio input source is effective.	
		c、To check whether the 8PIN audio ouput wire on the ISO connector is connected in place, if the wires are inserted in wrong place, or short cuirt, it will cause no audio output of the power amplifier(no output or output voltage is low).	
		d、To check the circuit of the power amplifier IC501 (LV47004) and volume IC403 (PT7313E).	
		e、To check the voltage of the 22nd pin(MUTE) of power amplifier IC501（LV47004）should be 4V.	
		f、To check the voltage of the control pins SDA、SCL(the 27th/28th) of IC403（PT7313E）should be 3V3.	
		g、To check the whether below datas were normal: the voltage of input/output pins of power amplifier IC501, the resistance between each pins, resistance to the grounding; input capacitor.	

Product Model	CMB2101	Area	55	Date	2013-4-24

NO.	failure	failure cause	remark
3	Radio abnormal	a、To check whether the antenna was cold solder	
		b、To check whether the intensity of radio input signal is too weak.	
		c、To check the voltage of the 7th pin of tuner should be +3V3.	
		d、To check the voltage of the 10th pin RES of tuner should be 3V6, the 11th pin CLK should be 3V1, the 12th pin DATE should be 2V8.	
		e、To check the oscillation frequency of the tuner crystal XT001 should be 32.768KHZ.	
		f、To check the L output voltage of the 5th pin of tuner should be 1V5, and the R output voltage of the 6th pin should be 1V5.	
4	CD defctive	a、 To check whether the contents in the disc are the format that the unit support, whether the disc is dirty or damage or serious light transmitting.	
		b、To check whether the CD deck mechanism can move normally, whether the disc can be loaded in place.	
		c、To check whether reading USB function was normal.	
		d、To check whether the 17P flat cable of the optical pick up was inserted in place, whether the flat cable locker was loose.	
		e、To check the surface of the optical pick up should be clean and no any foreign body.	
		f、To check the connector CON601、CON602.	
		g、To check the oscillation frequency of the crystal X602 should be 16.9344M.	
		h、To check the oscillation frequency of the crystal X603 should be 9MHZ.	
		i、To check the voltage of the 50th pin of IC 602 should be 3.3V.	
		j、To check the switch S601 on the servo board	
		k、To check the movement mechanism of the CD deck mechanism.	
		l、To check the voltage of the 8th pin of the IC603 should be +8V.	
		m、To check whether the conduction band(for disc in/out) is out of position or loose.	

Product Model	CMB2101	Area	55	Date	2013-4-24

NO.	failure	failure cause	remark
		n、To check the connected board of the CD deck mechanism.	
5	USB defctive	a、To check whether the format in the USB are fit the request of the unit.	
		b、To check the voltage of the uppest pin of the USB connector which was on the panel should be +5V.	
		c、To check the voltage of the 1st pin of main board IC 604 should be +3V3, the 2nd pin should be +3V when insertting USB, 0V if not insert USB.	
		d、To check whether the shrapnel of the USB socket and the USB pins were dirty or deformed.	
		e、 To check the oscillation frequency of the 7th pin crystal X603 of IC 604 should be 32.768KHZ.a	
		f、To check the pins of the male connector on the panel and female connector on the unit should be clean and connect well; can replace a panel to have a check whether the defective was caused by the unit or the panel.	
6	AUX defctive	a、To check whether it can switch to MP3-LINK mode when pressing SOURCE button.	
		b、 To check whether the input signal of AUX IN is normal.	
		c、 To check the pins of the male connector on the panel and female connector on the unit should be clean and connect well; can replace a panel to have a check whether the defective was caused by the unit or the panel.	

	NO-Fault-Found	The unit is first Powered up： ① ②
		The unit is normal power ON：